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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/888,182	06/22/2001	Keisuke Kuida	VPI/00-115 US	8856

7590 03/10/2004  
Andrew S. Marks  
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Cambridge, MA 02139-4242

EXAMINER

SHUKLA, RAM R

ART UNIT	PAPER NUMBER
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1632

DATE MAILED: 03/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

S/M

**Office Action Summary****Application No.**

09/888,182

**Applicant(s)**

KUIDA ET AL.

**Examiner**

Ram R. Shukla

**Art Unit**

1632

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --****Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 December 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 and 12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

1. Applicant's response and amendment filed 12-8-03 is acknowledged and has been entered.
2. Claims 8-11 have been cancelled.
3. Claims 1-7 and 12 are pending and under consideration.
4. The written description rejection pertaining to claims 3 and 4 have been withdrawn.

### ***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1-7 and 12 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement for reasons of record set forth in the previous office action of 10-15-2001. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

### ***Response to Arguments***

Applicant's arguments filed 12-8-03 have been fully considered but they are not persuasive. Applicants have argued that the heterozygous mouse has a utility for producing homozygous embryo. However, the issue is not utility, rather how to use. And the specification does not teach how to use a heterozygous mouse or cells wherein there is no effect of knocking out one allele of a gene. Applicants argue that the heterozygous mouse and cells will be used for producing homozygous mouse or for interbreeding and for screening of compounds. However, there is no difference in the phenotype of the heterozygous mouse or the cells therefore, an artisan would not be able to differentiate a wild type mouse from a heterozygous

knockout mouse of the instant application and therefore would not know how to use the mouse. As noted in the previous office action, if the heterozygous mice are normal and do not have any abnormalities, it indicates that protein produced from one allele of the gene is sufficient for supporting normal function in the heterozygous mice and therefore cells isolated from the heterozygous mice will not have any functional abnormality and therefore, an artisan will not know how to use these cells. Additionally, since these cells or mouse will behave like a normal mouse or cells and therefore, how would an artisan know that the effect of a compound in a screening assay is because of the effect of the compound on the mutated gene.

Regarding, claim 3 it is noted that claims are not allowable for any mutation that results in a functionally deficient Erk5 gene for reasons of record set forth in the previous office action of 10-15-01. A claim reciting the enabled scope of the inventions as set forth in the office action of 10-15-01 will obviate the rejection of claims 3 and 4.

Therefore, while an artisan could make a heterozygous transgenic mouse as recited, the specification does not teach how to use such said mouse and an artisan would have required undue experimentation to use said mouse in view of the lack of any phenotype associated with ERK5 mutation.

7. Claims 1-2, 5-7 and 12 remain rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention for reasons of record set forth in the previous office action of 10-15-01.

Applicant's arguments filed 12-8-03 have been fully considered but they are not persuasive. It is noted that while applicants have amended claims to a transgenic mouse, as noted in the previous office action, it is noted that while the specification discloses the phenotype of a homozygous mouse embryo, there is no description of the characteristics of any other species, including that for a

heterozygous mouse. It is further noted that while the claims drawn to heterozygous or chimeric mammals recite characteristics such characteristics are for what will be produced in a homozygous mouse and not in a heterozygous mouse.

8. The 112 second paragraph rejection is withdrawn in view of the applicants' amendment.

9. A homozygous transgenic mouse embryo, whose genome comprises a mutation in the endogenous Erk5 gene, wherein said mutation results in a non-functional Erk5 gene and wherein said transgenic mouse embryo does not produce a functional Erk5 protein and wherein said transgenic mouse embryo is characterized by a lack of vasculogenesis and angiogenesis; and

A cell isolated from said transgenic mouse embryo wherein the genome of said cell comprises a mutation in the endogenous Erk5 gene, wherein said mutation results in a non-functional Erk5 gene and wherein said cell does not produce a functional Erk5 protein is free of the prior art of record and is allowable.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

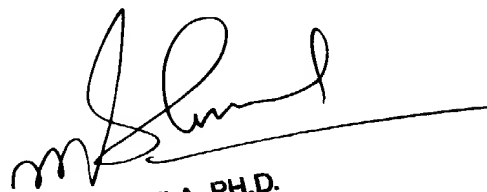
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ram R. Shukla whose telephone number is (571) 272-0735 . The examiner can normally be reached on Monday through Friday from 7:30 am to 4:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Reynolds, can be reached at (571) 272-0734. The fax phone number for TC 1600 is (703) 703-872-9306. Any inquiry of a general nature, formal matters or relating to the status of this application or proceeding should be directed to the William Phillips whose telephone number is (571) 272-0548.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ram R. Shukla, Ph.D.  
Primary Examiner  
Art Unit 1632



RAM R. SHUKLA, PH.D.  
PRIMARY EXAMINER